

REMARKS

I. Request for Continuing Examination

The above referenced application received an Office Action mailed December 31, 2009. The Office Action was in the nature of a final rejection of then pending claims 29, 32-43, and 48. The Examiner did not indicate any subject matter as allowable.

By way of response, a Request for Continuing Examination is filed herewith. Also an amendment to the claims, cancelling all previously pending claims, is provided, resulting in new claims 49-67 being added for consideration. For reasons stated herein, it is believed the claims are now in condition for allowance.

II. Request for Extension of Time

It is noted that a three-month extension of time is necessary, in order to provide for timeliness of the present response and for the Request for Continuing Examination. A request for such an extension is made.

III. The Claim Amendments and the Applicants' Invention as now Defined

It is noted that all of previously pending claims 29, 32-43, and 48 have been cancelled. New claims 49-67 have been added for consideration. Of the new claims, claim 49 is the only independent claim.

Claim 49 is directed to a method of preparing a filter construction for use in an air cleaner. The method involves:

(1) providing filter media in the form of a “single facer strip” i.e. comprising fluted media sheet secured to facing media sheet, with a first seal therebetween (against a first side of the facing sheet);

(2) forming the filter media construction into a generally circular coiled configuration, by coiling about itself with the facing sheet directed to the outside. This step of coiling is conducted with a sealant strip positioned between a fluted filter media and a second side of the

facing sheet. This strip would typically be referenced as a winding bead. The step of forming a coiled configuration comprises providing a resulting generally circular coiled configuration in the form of coreless coil having a central open space. (It can be provided for example by winding the single facer on a hub and then removal of the coil from the hub).

(3) The generally circular coiled configuration having a central open space is then distorted to a racetrack shape. Racetrack shapes are generally characterized in Applicants' patent application as corresponding to the shape shown in Fig. 9, and in general terms as having opposite curved, typically semi-circular, ends joined by substantially straight sides.

Again, in a preferred method of construction, the step of forming the generally circular coiled configuration comprises coiling the filter media on a hub and then removing the generally circular coiled configuration from the hub to provide a coreless coil. This coreless coil, when distorted to a racetrack shape, will bring two sections of fluted media together along the center, see Fig. 12.

In advantageous applications, a sealant strip positioned in the middle is a composition (typically urethane) that increases in volume during curing, preferably by at least 40%. This facilitates sealing, since the volume increasing polyurethane can flow into the central flute recesses to cause sealing.

(4) A step of preparing the filter construction includes adding a housing seal to a media construction that has a racetrack shape with no center core.

In an example method, when the distorting has occurred, it is carefully managed to interdigitize at least six flutes along a center strip of the z-filter media construction, in the region of the second sealant strip. This helps provide a good seal without the need for a core.

In some instances, polyurethane can be added (to facilitate the central sealing) before or during distortion.

Additional claims relate to other specific features and variations in the above general process.

The Examiner, in rejecting the previous claims, focused on a particular prior art reference, namely Gillingham WO 97/40917. The previous rejections were not anticipation rejections, but

rather were under §103. In some instances Wydeven (U.S. 6,743,317) was added for consideration of disclosure relating to polyurethane and Gieseke U.S. 6,610,117 was added for disclosure concerning a racetrack shape. Neither show a method of making a coreless circular unit and distorting it to a sealed, racetrack, shape without adding a core.

The Examiner focused on two portions of WO 2004/082795 to make the rejections.

1. First, the Examiner directs attention to page 9, lines 28-30, with respect to oval or oblong shapes.
2. Secondly, the Examiner directs attention to page 9, lines 30-31 for shaping prior to sealant material hardening.

After making these observations, the Examiner reached two key conclusions as follows:

1. There is no evidence the term “shaping” in Gillingham refers only to minor distortion; and,
2. One of ordinary skill in the art would reasonably consider “shaping” the filter element to encompass a change from a first shape to a completely different second shape.

The Examiner observes that coiling on a central mandrel and then removing is disclosed at page 9, lines 26-28.

With respect to the current independent claim 1, the Examiner’s attention is directed to the following observations:

1. The coiled units depicted in WO 97/40917 either have a central core member as shown for example in Figs. 24 and 25 or they are coiled tightly around themselves, as shown in Fig. 9. There is no “oval or oblong” unit, or racetrack unit, depicted or described in WO 97/40917 that does not have a central core.
2. There is no implied disclosure of making an oval racetrack unit, from a circular unit, at all.

3. To clarify the distinction from WO 97/40917, the current independent claims specify that it is a racetrack shape that results from the circular coil. This helps one understand that there is a specific focus on a particular distortion.

It is noted that some of the units of WO 97/40917, would appear to show an arrangement in which a core may have been inserted after the coiling occurred, an example being the unit depicted in Fig. 8 of WO 97/40917. The present claims clearly indicate that no core is inserted at any point.

It is noted that dependent claims 52 and 53 relate to a sealing being facilitated, where the fluted media joins itself, by using a polyurethane composition that increases in volume during cure. There is no suggestion in WO 97/40917 to do this, in the overall combination recited.

It is believed that the claims are now in condition, for allowance and a notice to this effect is requested. The Examiner is invited to contact Applicant's Representatives at the below listed telephone number, if it is believed that prosecution can be assisted thereby.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 336-4707

Date: July 19, 2010
(Originally Filed June 22, 2010)

Signed: /Randall A. Hillson/
Randall A. Hillson
Reg. No. 31,838
RAH/TPJ:jer:rlk

